

ABSTRACT

A method of fabricating an ink jet printhead includes the step of depositing a layer of a sacrificial material on a substrate that incorporates drive circuitry layers positioned on a wafer substrate. The layer of sacrificial material is etched to define deposition zones for actuators. A first layer of a thermally expandable actuator material is deposited on the deposition zones. The first layer of actuator material and the drive circuitry layers are etched to define deposition zones for a conductive material of the actuators and for vias for heating circuits of the actuators. A layer of a conductive material is deposited on the first layer of actuator material. The layer of conductive material is etched to define a heating circuit for each actuator. A second layer of actuator material is deposited on the layer of conductive material so that the heating circuits are embedded in the actuator material. The actuator material is etched to define the actuators and the closure members. Nozzle chamber walls are formed with a suitable deposition and subsequent etching technique. The sacrificial layer is etched away to free each actuator and closure member. Ink channels are etched through the substrate so that each ink channel is in fluid communication with a respective nozzle chamber.